

Title (en)

Method for the production of temporal rectangular ultra-short pulses

Title (de)

Verfahren zur Erzeugung zeitlich rechteckiger Ultrakurzpulse

Title (fr)

Procedé pour la production d'impulsions temporelles rectangulaires ultracourtes

Publication

EP 1775806 A1 20070418 (DE)

Application

EP 05022173 A 20051011

Priority

EP 05022173 A 20051011

Abstract (en)

The laser (1) has a mode-coupled ultra-short pulse oscillator (2) and a laser amplifier (3) that is connected to an output of the pulse-laser and oscillator. The output pulses have pulse duration of the order of less than 10 picoseconds, where the output pulses of the laser-amplifier are rectangular in shape. Rising or the falling flanks of the output pulses reach constant intensity having half or quarter of the value of the duration of a plateau by the intensity of the plateau. The centre wavelength of the output pulses of the amplifier lies between 600 and 1300 nanometer. Independent claims are also included for: (a) a method for generating rectangular ultra-short pulses with a pulse duration of less than 10 ps (b) a method for micro-structuring of materials by an ultra-short individual pulse or pulse sequences.

IPC 8 full level

H01S 3/23 (2006.01); **H01S 3/00** (2006.01)

CPC (source: EP)

H01S 3/0057 (2013.01); **H01S 3/235** (2013.01); **H01S 3/0606** (2013.01); **H01S 3/10038** (2013.01); **H01S 3/1075** (2013.01); **H01S 3/1618** (2013.01); **H01S 3/1643** (2013.01); **H01S 2301/08** (2013.01); **H01S 2301/206** (2013.01)

Citation (applicant)

- DE 10304401 A1 20040819 - FORSCHUNGSGESELLSCHAFT FUER ST [DE]
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Citation (search report)

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- [A] DE 10063976 A1 20020704 - LZH LASERZENTRUM HANNOVER EV [DE]
- [X] YANG J ET AL: "Low-emittance electron-beam generation with laser pulse shaping in photocathode radio-frequency gun", JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 92, no. 3, 1 August 2002 (2002-08-01), pages 1608 - 1612, XP012057007, ISSN: 0021-8979
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Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK YU

DOCDB simple family (publication)

EP 1775806 A1 20070418; EP 1775806 B1 20130313

DOCDB simple family (application)

EP 05022173 A 20051011